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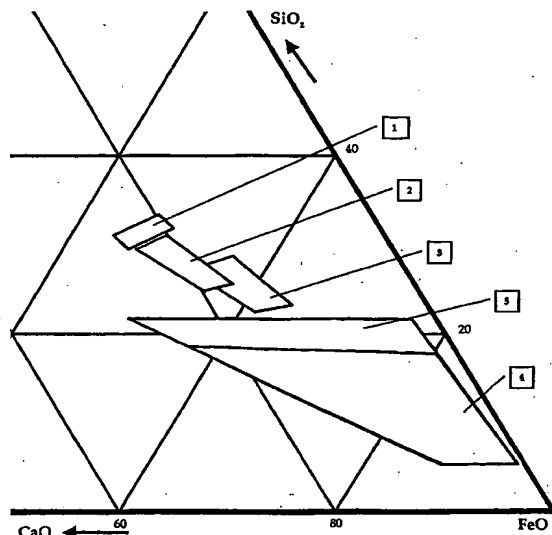
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[Continued on next page]

(54) Title: PROCESS AND APPARATUS FOR RECOVERY OF NON-FERROUS METALS FROM ZINC RESIDUES

$$\frac{[\text{Fe}]}{[\text{SiO}_2]} + \frac{[\text{CaO}]}{[\text{SiO}_2]} + \frac{[\text{MgO}]}{3} > 3.5;$$
$$0.1 < \frac{[\text{CaO}]}{[\text{SiO}_2]} < 1.3; \text{ and}$$
$$6 < [\text{SiO}_2] < 22. \quad (I)$$



(57) Abstract: The invention relates to a process for the separation and recovery of non-ferrous metals from zinc-bearing residues, in particular from residues produced by the zinc manufacturing industry. The process comprises the steps of: - subjecting the residue to a flash or agitated bath fuming step, thereby producing an Fe bearing slag and Zn- and Pb-bearing fumes; and - extracting the Zn- and Pb-bearing fumes and valorising Zn and Pb; characterised in that CaO, SiO<sub>2</sub> and MgO are added as a flux before or during the fuming step so as to obtain a final slag composition with: formula (I) all concentrations being expressed in wt%. The invention also relates to a single-chamber reactor for Zn-fuming equipped with one or more submerged plasma torches as heat and gas sources.



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